REMARKS

Claims 1-15 and 21-28 are pending, of which, claims 1, 14, 21, 23, 24, 26 and 28 are independent. Claims 1-3, 5-15 and 23-28 stand rejected and are now presented for reconsideration in view of the foregoing amendments and the following remarks. It is noted with appreciation that claims 21 and 22 were allowed.

Claims 1-3, 5-11, 14-15 and 23-28 were "rejected under 35 U.S.C. 103(a)" as being unpatentable over Maydan et al., U.S. Patent 5,292,393 in view of Yamamoto et al., U.S. Patent 4,094,722," and claims 12 and 13 were also "rejected under 103(a)" over Maydan et al. in view of Yamamoto et al. as applied to the claims cited above and further in view of Kroeker, U.S. Patent 6,000,227.

Claim 1, as now amended, is directed to a "vacuum processing system" including "a transfer chamber adapted to couple to and be selectively sealed from at least one processing chamber and at least one load lock chamber". Claim 14, as now amended, is directed to "a vacuum processing system" including "a transfer chamber...; one or more process chambers...; and one or more load lock chambers", and provides that the transfer chamber is "adapted to be selectively sealed from the one or more process chambers and the one or more load lock chambers". Claims 23, 24 and 26 also now comprise similar limitations.

As will be demonstrated below, the proposed combination of the Maydan et al. and Yamamoto et al. references fails to provide a transfer chamber having a curved (or domed) member or lid and adapted to couple to and be selectively sealed from both a processing chamber and a load lock chamber, as now required by all of the above-described claims. In addition, and as will also be explained below, a close reading of the Maydan et al. and Yamamoto et al. references reveals that each reference teaches away from providing a curved or domed lid for a transfer chamber. As such, Applicant respectfully requests that the Examiner

reconsider the present 103(a) rejection of claims 1-3, 5-15 and 23-28 in light of the arguments advanced herein.

Specifically referring to independent claim 28, applicant respectfully requests reconsideration of the present rejection based on the foregoing and based on the fact that the claimed convex lid configuration reduces the volume inside the transfer chamber and thereby improves the efficiency of operation and reduces the potential for particulate contamination. The claimed lid configuration is significant, at least for these reasons, and should not be considered a mere matter of choice.

The primary reference Maydan et al. at least nominally fails to specifically identify a transfer chamber, such that the transfer chamber is adapted to couple to both at least one processing chamber and at least one load lock chamber. In contrast, Maydan et al. provides what is referred to as a "load lock chamber" 14 that is directly coupled to a processing chamber 16 and sealable from the processing chamber 16 via a slit valve 38, and that is also coupled to a cassette elevator 24 via an opening to the load lock chamber 14 that is sealable via another slit valve 38. However, applicant recognizes that the Examiner may be viewing the load lock chamber 14 of Maydan et al. as a transfer chamber in connection with in the presently rejected claims.

The load lock chamber 14 of Maydan et al., as shown in FIG. 2, includes an unnumbered lid that is sealed against a housing 12 of the load lock chamber 14, and that is plainly flat.

The secondary reference Yamamoto et al. provides an object etching chamber 26 as part of a larger air-tight hollow substantially flat chamber that also includes an object feeding chamber 20. However, the object feeding chamber 20 is specifically described as being "spaced from" the object etching chamber 26 and as being "adapted to couple to" the object etching chamber 26. This being so, Applicant respectfully submits that

the object feeding chamber 20 is more analogous to a load lock chamber as that term is used in the present claims than a transfer chamber, although applicant would dispute that characterization. It is further submitted that the only structure of Yamamoto et al. that would even arguably amount to a "transfer chamber" would be the "space" within the circular depression 11 that lies beneath the disk-like cover 12, above the top surfaces of the support disk 34 and/or the larger palette 38, and between the object feeding chamber 20 and the object etching chamber 26. Furthermore, that "space" is characterized as being shallow and having a flat "lid" comprising the disk-like cover 12.

Significantly, Yamamoto et al. fails to provide for any of the object feeding chamber 20, the object etching chamber 26, and the transfer space to be sealable from each other. By contrast, although Yamamoto et al. provides a cylindrical gas flow-baffling skirt 40 to "prevent" an etching gas from being conducted from the object etching chamber 26 to palettes 38 not presently within that chamber, a gap appears to be provided between the skirt 40 and the rotatable disk 34, and other gaps within the assembly appear to be provided so that no seal may exist between the space and the chambers (col. 3 lines 28-49). As such, if Yamamoto et al. provides a transfer chamber at all, it provides one that appears to be incapable of being sealed from the chambers to which it is coupled, and that has a flat lid.

Yamamoto et al. and Maydan et al. would therefore appear to provide diametrically different types of vacuum processing apparatus, e.g. one which requires a load lock chamber to be sealable from chambers to which it is coupled, and one which requires all chambers to be pneumatically common, with the transfer chamber being an unsealed passage between the "spaced apart" feed and etching chambers. As such any combination of the apparatus described in the two references would likely be forced

into one or the other configuration, in violation of the spirit of at least one reference. Moreover, the most natural combination of the two references would provide a process chamber with a domed lid and a remote load lock chamber with a domed lid; plus, and significantly, a transfer chamber between the domed chambers having a flat lid.

Given the "unanimity" with which the Yamamoto et al. and the Maydan et al. references suggest and demonstrate the use of a flat lid for a transfer chamber, and especially considering the geometrically different lids provided by Yamamoto et al. for the feed and etch chambers on the one hand (domed hatches) and the transfer space on the other hand (a flat disc), it is respectfully submitted that if Yamamoto et al. believed a dome-lidded transfer space would be advantageous, the same would have been disclosed, at least as an alternative. Conversely, the transfer space is shallow and flat, which would appear to conform with reducing the volume of the transfer space for purposes of efficiency. The Krocker reference does not appear to be relevant to Applicant's pending independent claims. Accordingly, it is respectfully submitted that all of the pending claims are allocable over the prior art of record, alone or in combination.

In view of the foregoing, it is submitted that all of the pending claims are in condition for allowance. Passage to issue is respectfully requested.

Applicant believes the claims are now in condition for allowance, and respectfully requests reconsideration and allowance of the same. A Request for Continued Examination (with the requisite fee) and a request for a one month extension of time (with the requisite fee) are enclosed herewith. Applicant does not believe any other fees are due regarding this Amendment. However, if any other fees are required, please charge Deposit Account No. 04-1696.

Respectfully Submitted,

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VERSION MARKED TO SHOW CHANGES

In the Claims:

Claims 1, 14, 23, 24 and 26 have been amended as follows.

1. **(Twice Amended)** A vacuum processing system, comprising:

a transfer chamber adapted to couple to and be selectively sealed from at least one processing chamber and at least one load lock chamber and to house at least an end effector of a robot adapted to transport a substrate between the at least one processing chamber and the at least one load lock chamber; and

a lid mounted on the transfer chamber wherein the lid has a curved configuration such that an edge of the lid is sealed to an edge of the transfer chamber and the lid is curved such that a center of the lid gradually increases its distance both horizontally and vertically from the edge of the transfer chamber.

14. **(Twice Amended)** A vacuum processing system comprising:

a transfer chamber having a domed lid;

one or more process chambers attached to the transfer chamber; and

one or more load lock chambers attached to the transfer chamber;

wherein the transfer chamber is adapted to be selectively sealed from the one or more process chambers and the one or more load lock chambers.

23. **(Amended)** A vacuum processing system, comprising:

a transfer chamber having at least one processing chamber and at least one load lock chamber coupled thereto, the transfer chamber being adapted to be selectively sealed from both the at least one processing chamber and the at least one load lock chamber;

a robot adapted to transport a substrate between the at least one processing chamber and the at least one load lock chamber via the transfer chamber; and

a lid mounted on the transfer chamber wherein the lid has a curved configuration such that an edge of the lid is sealed to an edge of the transfer chamber and the lid is curved such that a center of the lid gradually increases its distance both horizontally and vertically from the edge of the transfer chamber.

24. (Amended) A vacuum processing system, comprising:

a transfer chamber having at least one processing chamber and at least one load lock chamber coupled thereto, the transfer chamber being adapted to be selectively sealed from both the at least one processing chamber and the at least one load lock chamber;

a robot adapted to transport a substrate between the at least one processing chamber and the at least one load lock chamber via the transfer chamber; and

a domed, horizontally disposed member adapted to form an airtight seal with the transfer chamber.

26. (Amended) An apparatus, comprising:

a transfer chamber adapted to:

be coupled to and selectively sealed from at least one processing chamber;

be coupled to and selectively sealed from at least one load lock chamber; and

have a robot at least partially installed therein, the robot being adapted to transport a substrate between the at least one processing chamber and the at least one load lock chamber via the transfer chamber; and

a domed, horizontally disposed member adapted to form an airtight seal with the transfer chamber.